American University – Central Asia
Program: Applied Mathematics and Informatics

CHECKLIST

Student's Name_____ **ID #** _____

Major: Applied Mathematics and Informatics _____ **Year of Admission** __2021_____

Minor: _____ **Year of Declaration** _____

Course Name	Course #	ID	Cr	Prereq	Comments
Orientation week- August 16-27, 2021			**2**		outside of 240 credits
General Education Courses					**Total - 98 credits**
First Year Seminar I			4		
First Year Seminar II			4		
Introduction to Philosophy I (part of FYS)			2		
Introduction to Philosophy II (part of FYS)			2		
English Composition I			6		
English Composition II			6		
Kyrgyz Language and Literature I			4		
Kyrgyz Language and Literature II			4		
Russian Language I			2		
Russian Language II			2		
History of Kyrgyzstan			4		
Geography of Kyrgyzstan			2		
Manas Studies			2		
Social Sciences (12 credits):					
Student has to choose from the following list of Majors: Anthropology, Economics, European Studies, IBL, ICP, Psychology, Sociology and LAS Concentrations.			12	OR Second Year Seminar: Social science (6 credits)	
Humanities (12 credits):					
Modern Foreign Languages (only 6 cr. will count), Religious Study, History, Literature, and/or Culture			12	OR Second Year Seminar: Humanities (6 credits)	
Art and Sport					
Arts			12	OR Second Year Seminar: Arts (6 credits)	
Sports			0	4 semesters-1 sport class- 400 hours	
Natural science (6 credits)					
Physics. Computer Modeling.	MAT-202.1		6	MAT-131.2	
Mathematics (12 credits)					
Linear Algebra & Analytic Geometry (for AMI)	MAT-131.2		6	none	
Mathematical Analysis I (for AMI)	MAT-233.2		6	MAT-131.2	
Courses on Specialty					**142 credits(min)**
Required Courses on Major					**Total - 128 credits**
Discrete Mathematics and Mathematical Logic I	COM-227		6	none	
Discrete Mathematics and Mathematical Logic II	COM-228		6	COM-227	
Mathematical Analysis II	MAT-316.2		6	MAT-233	

Course	Code		Credits	Prerequisites	Notes
The Theory of Probabilities and Mathematical Statistics	MAT-307		6	MAT-131	
Ordinary Differential Equations	MAT-332		6	MAT-233.2	
Equations of Mathematical Physics	MAT-360		6	MAT-316.2 MAT-332	
Numerical Methods	MAT-407		6	MAT-233.2 COM-118 MAT-332- desirable	
Numerical Methods for Equations of Mathematical Physics	MAT-410		6	MAT-407, MAT-360	
Functional Analysis	MAT-341		6	MAT-316.2, MAT-326	
Complex Variables	MAT-326		6	MAT-316.2	
Optimization Methods	MAT-435		6	MAT-233.2	
Introduction to Software Engineering and Informatics	COM-108		6	none	Courses from Software Engineering Program
Structural programming	COM-118		6	none	
Object Oriented Programming	COM-119		6	COM-118	
Computer Architecture	COM-410.1		6	COM-223.1	
Operating Systems	COM-341.1		6	COM-410.1	
Database	COM-213		6	COM-119	
Computer Graphics or Graphic Design I or II	COM-391		6	COM-223.1	
	JMC/COM/ TCMA-301			FYS-216	
Research Methods in Applied Mathematics	MAT-370		6	MAT-131.2	
Senior project preparation I	MAT-480		3	MAT-370	
Senior project preparation II	MAT-481		3	MAT-480	
Internship I (Educational Tasks)	MAT-380		3	none	
Internship II (Research Project)	MAT-479		3	none	
Safety Management and Economics	COM-120		2	none	
Elective Courses on Major					**18 credits (min)**
Quantitative Decision Making	BUS/MAT -366		6	MAT-131.2	
Game Theory	MAT-317		6	MAT-233	
Actuarial Mathematics I	BUS/MAT -367		6	MAT-307	
Actuarial Mathematics II	BUS/MAT -368		6	BUS/MAT-367	
Algorithms and Data structures	COM-223.1		6	COM-119	Required for Minor in SFW
Algorithm Analysis	COM-324.1		6	COM-223.1	
Information security	COM - 424.1		6	COM-119	
Intro to Web programming	COM-388.1		6	COM-119	
Database design	COM-236.1		6	COM-213	
Courses for the education profile "Mathematical Modeling in Natural and Social Sciences"					
Mathematical Modeling in Geophysics	MAT-420		6	MAT-407, MAT-316.2, MAT-410- desirable	
Mathematical Modeling in Economics	MAT/ECO - 333		6	MAT-233.2	
Courses for Minor*					
Total number of credits					**240**

Order of study for 2021 admits

Orientation week- August 16-27- 2 credits			

I semester (30 credits)		**II semester (30 credits)**	
Gen. Ed. First Year Seminar I	4	**Gen. Ed.** First Year Seminar II	4
Introduction to Philosophy I (part of FYS)	2	Introduction to Philosophy II (part of FYS)	2
English Composition I	6	English Composition II	6
Linear Algebra and Analytic Geometry	6	Mathematical Analysis I	6
Sport	0	Sport	0
Profile Discrete Mathematics and Math Logic I	6	**Profile** Physics. Computer Modeling	6
Introduction to Software Engineering and Informatics	6	Discrete Mathematics and Math Logic II	6

III semester (32 credits) +1optional		**IV semester (32 credits) +1optional**	
Profile Structural programming	6	**Profile** Object Oriented Programming	6
Ordinary Differential Equations	6	Numerical Methods	6
Mathematical Analysis II	6	The Theory of Probabilities and Mathematical Statistics	6
Safety Management	2		
Gen. Ed. Kyrgyz language and literature I	4	**Gen. Ed.** Kyrgyz language and literature II	4
		History of Kyrgyzstan	4
Russian Language I	2	Geography of Kyrgyzstan	2
Second year seminar (SS/ART/HUM)	6	Russian Language II	2
		Manas Studies	2
Sport	0	Sport	0

V semester (30 credits) +3 optional		**VI semester (30 credits)+3 optional**	
Profile Functional Analysis	6	**Profile** Equations of Mathematical Physics	6
Database	6	Research Methods in Applied Math	6
Optimization Methods	6	Computer Architecture	6
Complex Variables	6	Computer Graphics	6
Gen. Humanities / Social Science/ Arts	6	**G.** Humanities / Social Science/ Arts	6

VII semester (30 credits) +3 optional		**VIII semester (30 credits) +3 optional**	
Profile Senior project preparation I	3	**Profile** Senior project preparation II	3
Numerical Methods for Equations of Mathematical Physics	6	Mathematical Modeling in Geophysics	6
Operating Systems	6	Mathematical Modeling in Economics	6
Internship I	3	Elective	6
Internship II	3		
Elective	6	**Gen. Ed.** Humanities / Social Science/ Arts	6
Gen. Humanities / Social Science/ Arts	6	Humanities / Social Science/ Arts	6

During 4th year of study, in case your overall GPA is higher than 3.0, you can transfer 3 additional credits from one semester to another (to take one extra 6 credits course)

	Courses from AMI program
	Courses from SFW program
	Courses should be taken only during 2 year of studies, to pass a State Examination